

CLAIMS

1. A moisture-activated adhesive composition comprising the reaction product of

5 (A) a polyisocyanate selected from (a) a blend of polymeric MDI and pure MDI and/or from (b) an isocyanate-terminated prepolymer.

(B) an isocyanate-reactive component comprising at least one aliphatic tertiary amine group-containing polyol made by alkoxylation of amines or aminoalcohols

10 characterized in that the total ethylene oxide content by weight of the total adhesive composition is more than 2.5%

2. A moisture-activated adhesive composition according to claim 1 whereby at least 40% of the total ethylene oxide content is present as part of the reactant

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3. A moisture-activated adhesive composition according to claims 1-2 whereby the weight ratio of ethylene oxide to propylene oxide is at least 1 to 8, said propylene oxide being part of the reactant and/or from an additional polyol being present in the composition

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4. A moisture-activated adhesive composition according to claims 1-3 whereby the total nitrogen concentration of the total composition is from 0.002 to 0.05 eqN/100 g

25 5. A moisture-activated adhesive composition according to claims 1-4, wherein said polymeric polyisocyanate is a polymeric diphenylmethane diisocyanate.

6. A moisture-activated adhesive composition according to claim 1-5, wherein said isocyanate-terminated prepolymer having an NCO content of 10 to 29 %.

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A moisture-activated adhesive composition according to claim 6, wherein said isocyanate-terminated prepolymer is the reaction product of polymeric diphenylmethane diisocyanate and a polyether polyol having a molecular weight of from 1000 to 6000.

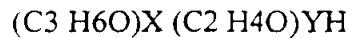
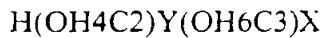
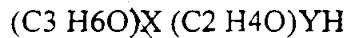
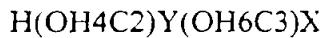
8. A moisture-activated adhesive composition according to claim 1, wherein said reactant is an aliphatic tertiary amine group-containing polyol having an ethylene oxide content of 1 to 90 %.

10 9. A moisture-activated adhesive composition according to claim 8, wherein said aliphatic tertiary amine group-containing polyol has an ethylene oxide content of 5 to 60 %.

10. A moisture-activated adhesive composition according to claim 1, wherein said aliphatic tertiary amine group-containing polyol has a molecular weight of 1500 to 10,000 and comprises an initiator having 1 to 18 carbon atoms.

11. A moisture-activated adhesive composition according to claim 1, wherein said aliphatic tertiary amine group-containing polyol is prepared from a compound selected 20 from the group consisting of ethylene diamine, triethylene tetramine and triethanolamine.

12. A moisture-activated adhesive composition according to claim 11, wherein said aliphatic tertiary amine group-containing polyol is an ethylene diamine-based polyol 25 having the following formula:



wherein x is an integer of 1 to 29.0 and y is an integer of 0.1 to 10.

Sub 10
5 13. A moisture-activated adhesive composition according to claim 1, further comprising a catalyst.

14. A process for bonding multiple substrates comprising

10 (1) applying to a surface of a first substrate a moisture-activated adhesive composition as defined in any one of the preceding claims
(2) contacting said surface with a surface of a second substrate
(3) applying pressure to the contacted surfaces, and
(4) curing said adhesive composition.

15 15. A process according to claim 14, wherein said substrate has a moisture content of at least 7 % by weight.

Sub 14
16. An engineered lumber product prepared by the process according to claim 14.

20 17. A process for bonding according to claim 16, wherein additional moisture is applied to the first substrate surface, the surface of the applied adhesive and/or the surface.

Claim 17